

[SHALLOW TRENCH ISOLATION STRUCTURE AND DYNAMIC RANDOM ACCESS MEMORY, AND FABRICATING METHODS THEREOF]

Abstract

A method for fabricating a shallow trench isolation (STI) structure is described. A patterned mask layer is formed on a substrate. An ion implantation is performed to form a doped region in a predetermined depth in the substrate exposed by the mask layer. An etching process is conducted to etch the substrate down to the doped region to form a shallow trench. Thereafter, an isolating material is filled into the shallow trench to form an STI layer. The doped region is located directly under the STI layer, and no doped region is formed in the sidewall of the shallow trench.